

IN THE CLAIMS

Amend the claims as set out in the following listing of the claims. This claim listing replaces and supersedes all prior listings of the claims.

Claims 1-23 (Canceled)

--24. (Currently amended) An electronic apparatus adapted to transmit and receive data over a serial data bus, said apparatus comprising:

a first terminal operably connectable to an IEEE 1394 serial bus cable having two twisted pairs;

a second terminal operably connectable to a multi-purpose cable for use as at least part of said serial data bus when operably connected to said second terminal, said multi-purpose cable selected from the group consisting of an optical-fiber cable, an unshielded-twisted pair (UTP) cable, and a stand-alone cable comprising only one shielded-twisted pair (STP) cable;

an IEEE 1394 physical-layer protocol logic section operative to perform serial data bus initialization and arbitration;

a first conversion section connected between said logic section and said first terminal to convert signals transmitted and received between said serial bus cable and said logic section, said first conversion section comprising a DS coding section and a first signal level adjustment section; and

a second conversion section connected between said second terminal and said logic section to convert signals transmitted and received to and from said logic section and said

optical-fiber, UTP or stand-alone cable, said second conversion section comprising a code conversion section, a multilevel transmission -3 (MLT-3) section for performing MLT-3 coding of data to be transmitted on said UTP cable or stand-alone cable, and for performing MLT-3 reverse conversion of data received from said UTP or stand-alone cable, and a second signal level adjustment section.--

Claim 25 (Canceled)

--26. (Currently amended) The electronic apparatus of Claim 25 24, wherein said code conversion section is a m bit to n bit conversion section for performing m bit to n bit conversion of data to be transmitted from said apparatus on said UTP or stand-alone cable and n bit to m bit conversion of data received by said apparatus from said UTP or stand-alone cable.--

--27. (Previously presented) The electronic apparatus of Claim 24 wherein,
said multi-purpose cable is said fiber optic cable, and said second terminal operably connects to said optical-fiber cable via an electro-optical converter;

said first conversion section comprises a DS coding section and a first signal level adjustment section; and

said second conversion section comprises a code conversion section, a NRZI coding section and a second signal level adjustment section.--

--28. (Previously presented) The electronic apparatus of Claim 27, wherein said code

conversion section is a m bit to n bit conversion section for performing m bit to n bit conversion of data to be transmitted from said apparatus on said optical-fiber cable and n bit to m bit conversion of data received by said apparatus from said optical-fiber cable.--

--29. (Previously presented) The electronic apparatus of Claim 24 wherein,
said first conversion section comprises a DS coding section and a first signal level adjustment section;
said second conversion section comprises:
a code conversion section connected to said logic section;
a multilevel transmission -3 (MLT-3) section for performing MLT-3 coding of data to be transmitted on said UTP cable or stand-alone cable, and for performing MLT-3 reverse conversion of data received from said UTP or stand-alone cable, and a second level adjustment section;

a NRZI coding section for coding data transmitted on and received from said optical-fiber cable; and

switching means for switching to said NRZI section when said optical-fiber cable is operably connected to said second terminal and to said MLT-3 section when said UTP or stand-alone cable is operably connected to said second terminal.--

--30. (Previously presented) The electronic apparatus of Claim 29, further comprising a

connector detector for detecting the type of connector connected to said second terminal, said connector detector controlling switching states of said switching means based on the connector type detected.--

--31. (Previously presented) The electronic apparatus of Claim 24, wherein connection of said second terminal to said UTP or stand-alone cable is made through an insulating transformer, and connection of said second terminal to said optical-fiber cable is made through an electro-optical converter.--

--32. (Currently amended) An electronic apparatus adapted to transmit and receive data over a serial data bus, said apparatus comprising:

a first terminal operably connectable to a serial bus cable having two twisted pairs;

a second terminal operably connectable to a multi-purpose cable for use as at least part of said serial data bus when operably connected to said second terminal, said multi-purpose cable selected from the group consisting of an optical-fiber cable, an unshielded-twisted pair (UTP) cable, and a stand-alone cable comprising only one shielded-twisted pair (STP) cable;

a physical-layer protocol logic section operative to perform serial data bus initialization and arbitration;

a first conversion section connected between said logic section and said first terminal to convert signals transmitted and received between said serial bus cable and said logic section, said

first conversion section comprising a DS coding section and a first signal level adjustment section; and

a second conversion section connected between said second terminal and said logic section to convert signals transmitted and received to and from said logic section and said optical-fiber, UTP or stand-alone cable, said second conversion section comprising a code conversion section, a multilevel transmission -3 (MLT-3) section for performing MLT-3 coding of data to be transmitted on said UTP cable or stand-alone cable, and for performing MLT-3 reverse conversion of data received from said UTP or stand-alone cable, and a second signal level adjustment section.--

Claim 33. (Canceled)

--34. (Currently amended) The electronic apparatus of Claim ~~33~~ 32, wherein said code conversion section is a m bit to n bit conversion section for performing m bit to n bit conversion of data to be transmitted from said apparatus on said UTP or stand-alone cable and n bit to m bit conversion of data received by said apparatus from said UTP or stand-alone cable.--

--35. (Previously presented) The electronic apparatus of Claim 32 wherein,
said multi-purpose cable is said optical-fiber cable, and said second terminal is operably connectable to said optical-fiber cable via an electro-optical converter;

said first conversion section comprises a DS coding section and a first signal level adjustment section; and

said second conversion section comprises a code conversion section, a NRZI coding section and a second signal level adjustment section.--

--36. (Previously presented) The electronic apparatus of Claim 35, wherein said code conversion section is a m bit to n bit conversion section for performing m bit to n bit conversion of data to be transmitted from said apparatus on said optical-fiber cable and n bit to m bit conversion of data received by said apparatus from said optical-fiber cable.--

--37. (Previously presented) The electronic apparatus of Claim 32 wherein,
said first conversion section comprises a DS coding section and a first signal level adjustment section;

said second conversion section comprises:
a code conversion section connected to said logic section;
a multilevel transmission -3 (MLT-3) section for performing MLT-3 coding of data to be transmitted on said UTP cable or stand-alone cable, and for performing MLT-3 reverse conversion of data received from said UTP or stand-alone cable, and a second level adjustment section;

a NRZI coding section for coding data transmitted on and received from said optical-fiber cable; and

switching means for switching to NRZI section when said optical-fiber cable is connected

to said second terminal and said MLT-3 section when said UTP or stand-alone cable is connected to said second terminal.--

--38. (Previously presented) The electronic apparatus of Claim 29, further comprising a connector detector for detecting the type of connector connected to said second terminal, said connector detector controlling switching states of said switching means based on the connector type detected.--

--39. (Previously presented) The electronic apparatus of Claim 32, wherein connection of said second terminal to said UTP or stand-alone cable is made through an insulating transformer, and connection of said second terminal to said optical-fiber cable is made through an electro-optical converter.--

Claims 40-41 (Canceled)